

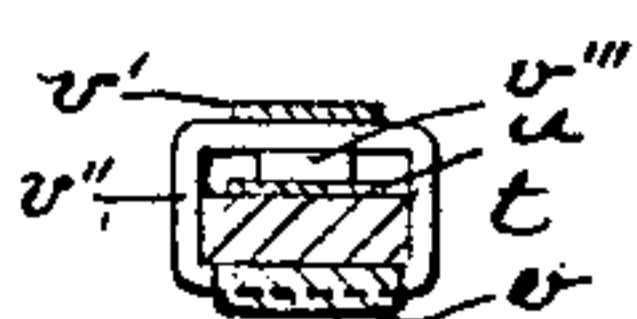
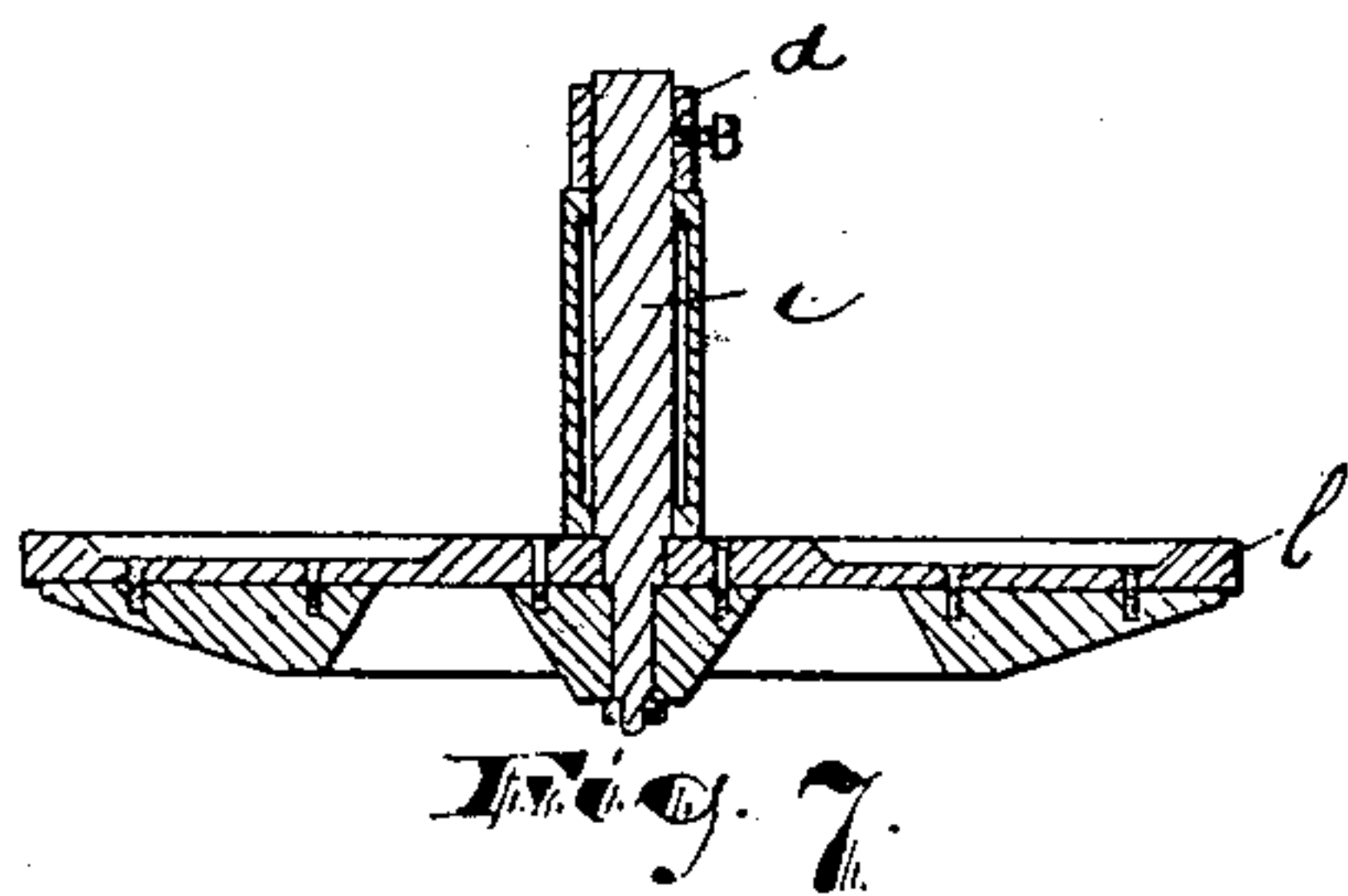
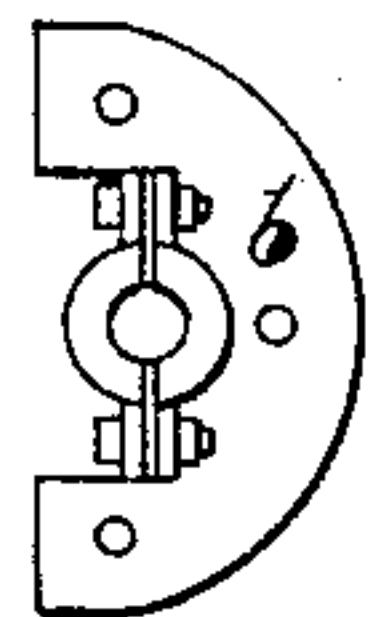
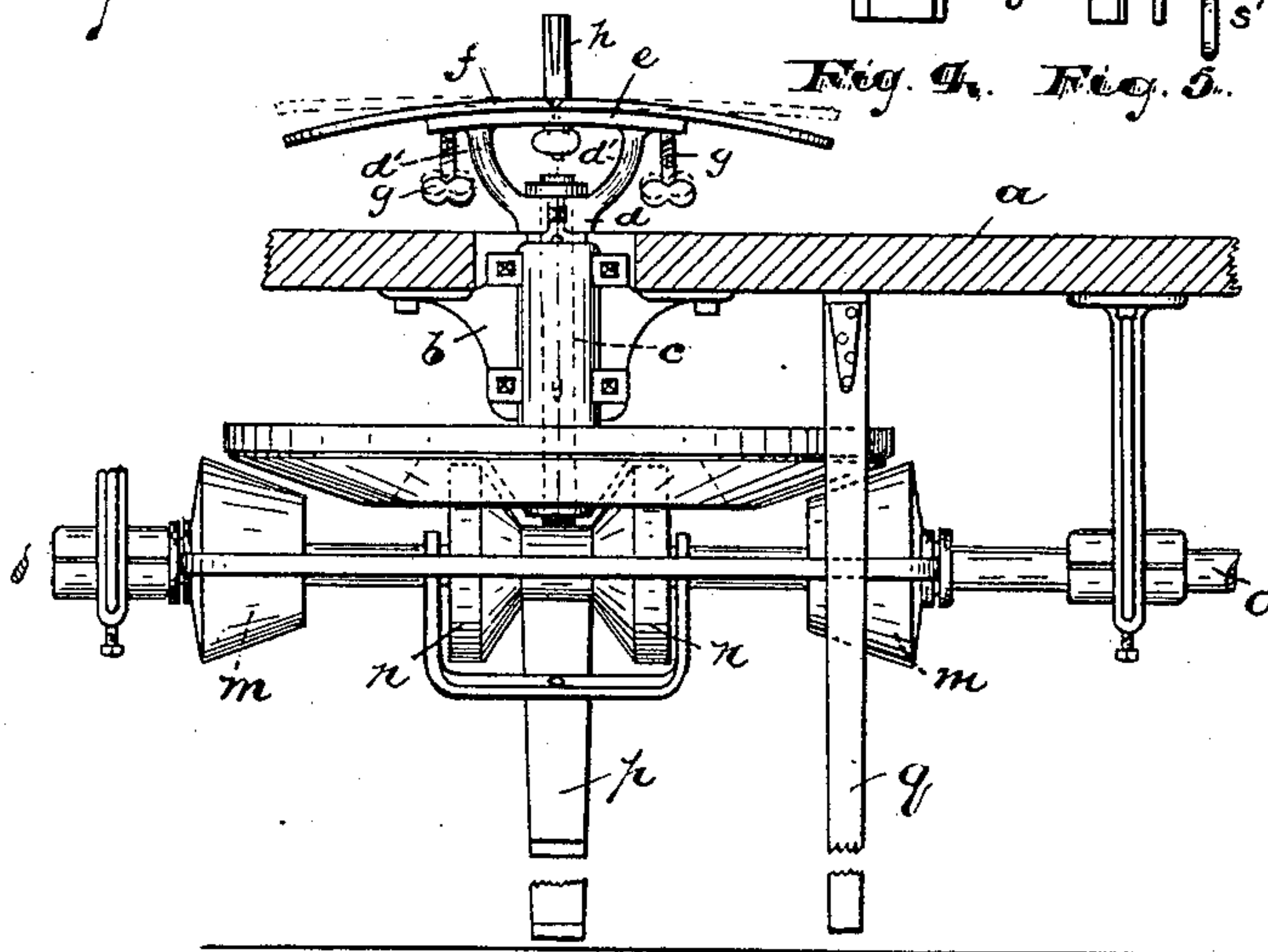
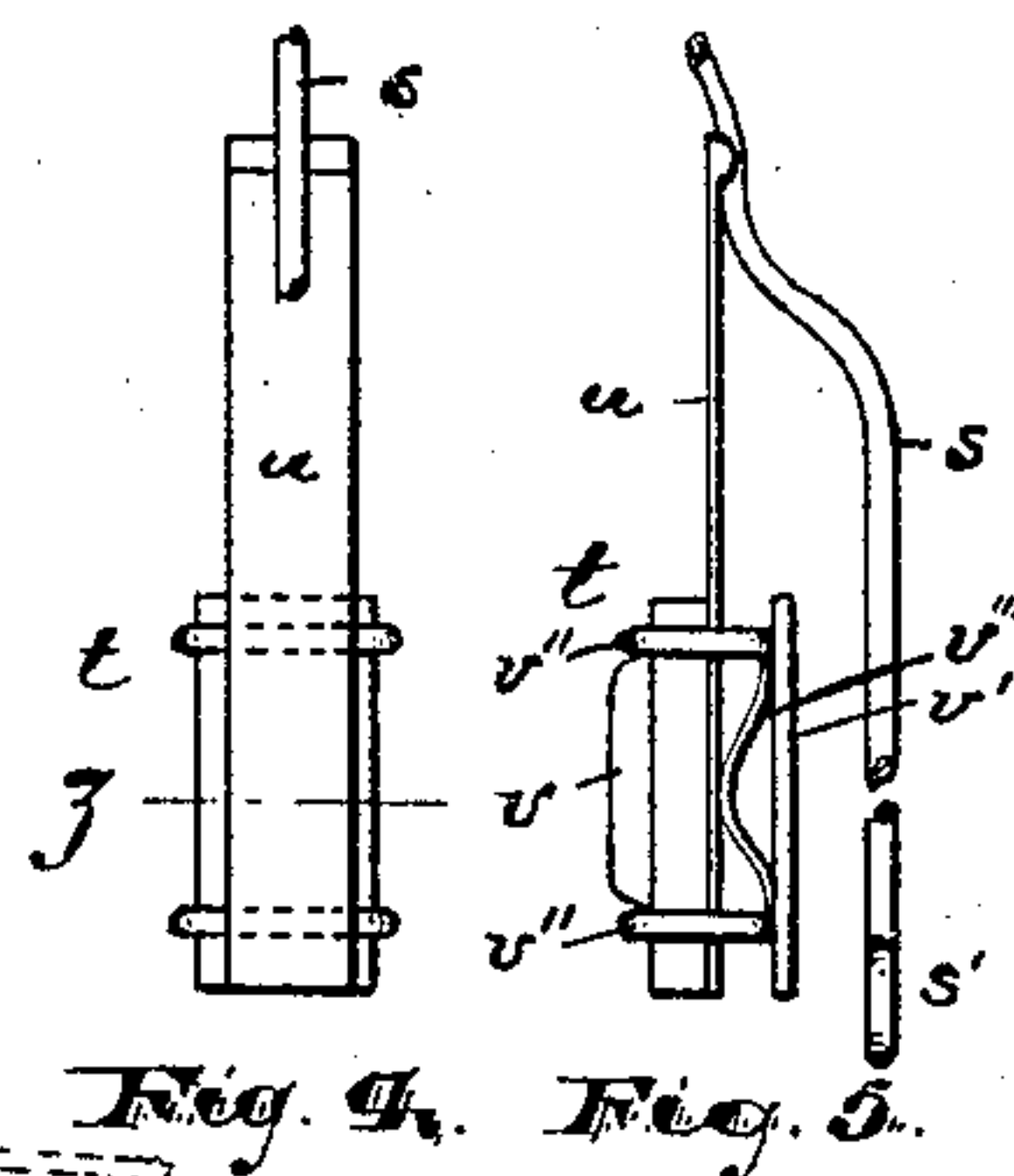
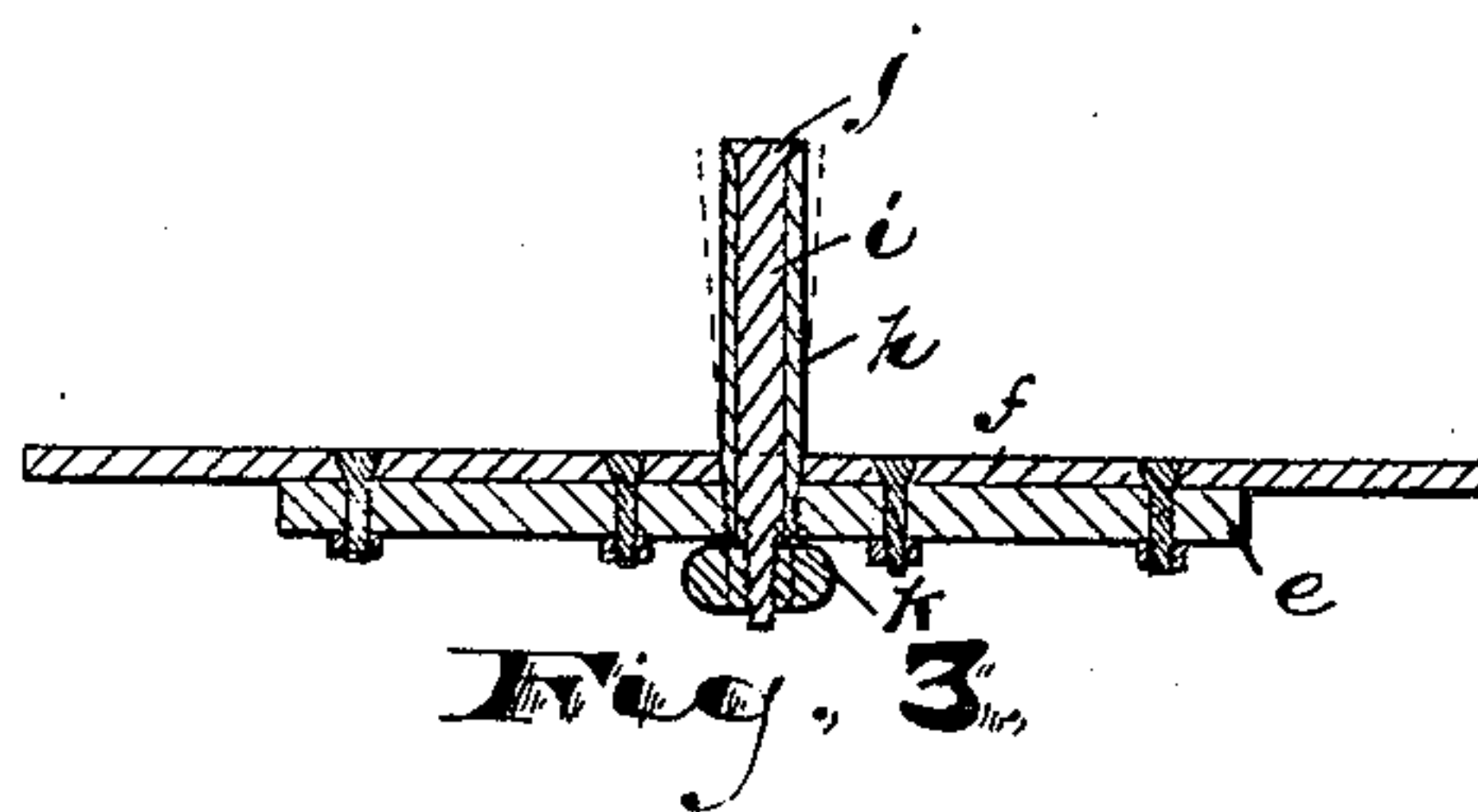
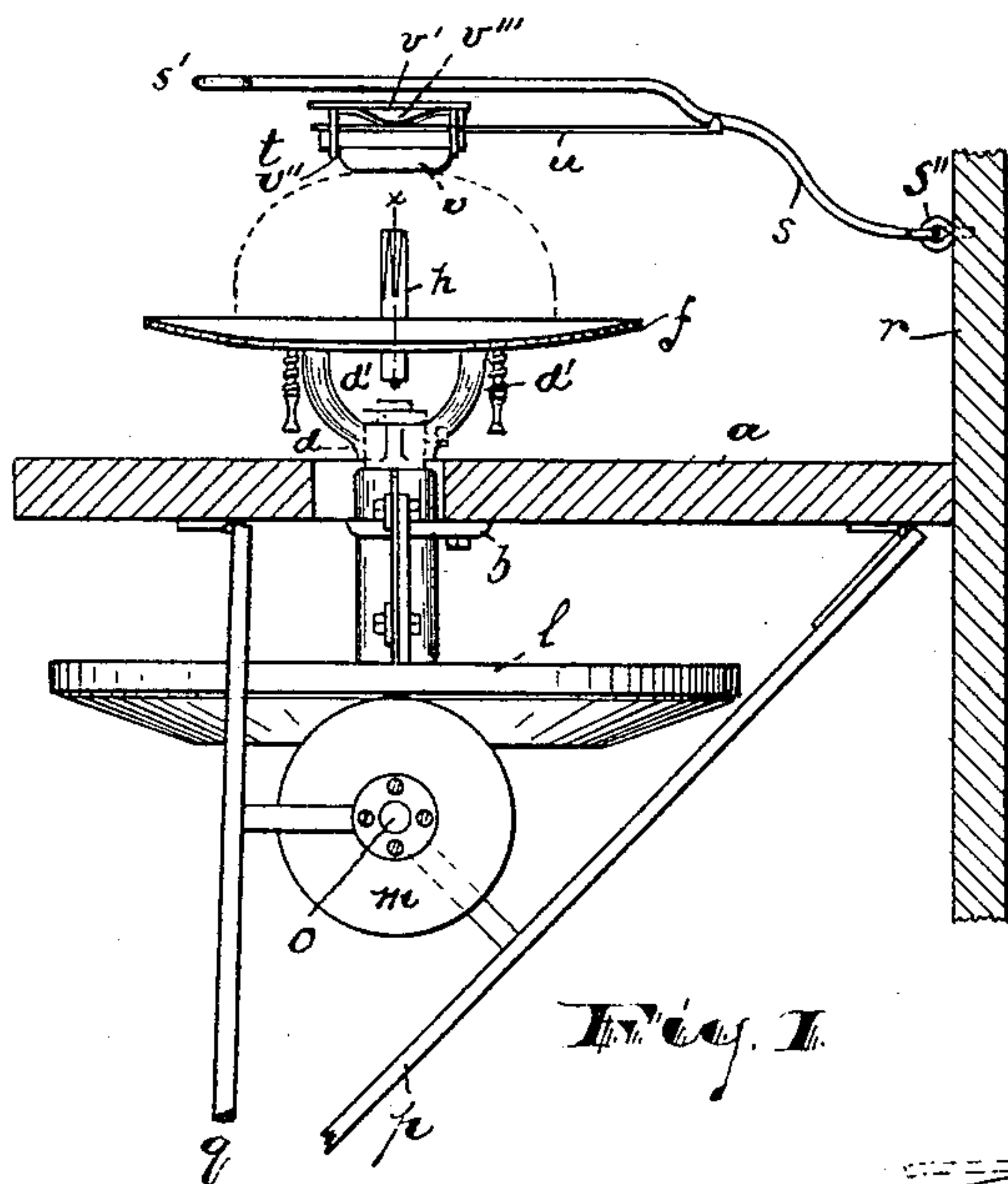
No. 607,653.

Patented July 19, 1898.

W. E. CUMMINGS.
HAT FINISHING MACHINE.

(Application filed Nov. 14, 1896)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM E. CUMMINGS, OF ORANGE, NEW JERSEY.

HAT-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 607,653, dated July 19, 1898.

Application filed November 14, 1896. Serial No. 612,049. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. CUMMINGS, a citizen of the United States, residing at Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Hat-Finishing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to facilitate the operation of hat-finishing; to provide a machine that can be operated at varying rates of speed and otherwise adapted to various kinds of finishing operations, such as ironing, pouncing, &c.; to facilitate the work of changing from one kind of work to another, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved hat-finishing machines and in the arrangements and combinations of parts, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the views, Figure 1 is a side elevation of the improved machine. Fig. 2 is a front elevation of the same. Fig. 3 is a detail section taken at line *x*. Figs. 4 and 5 are respectively a plan and side view of a certain portion of the machine used more particularly in connection with the pouncing operation. Fig. 6 is a detail plan showing a bearing for the rotary shaft which carries the brim-board. Fig. 7 is a sectional view on line *y* of a pulley for operating the said shaft. Fig. 8 is a detail showing a certain modification of construction, and Fig. 9 is a section taken on line *z*.

In carrying out the invention I arrange upon a suitable foundation or bed, such as the bench *a*, a housing or bearing plate *b*, provided with vertically-disposed journaled boxes adapted to receive a shaft *c*. On said

shaft, at the top or above said bench *a*, the said shaft is provided with a collar *d*, having arms *d'*, on which is seated or formed a plate *e* for a brim-board *f*, the said brim-board being fastened upon said plate in a direction or in a line corresponding with the central front and rear line of the hat-body, as indicated in Fig. 3, and at the sides, or in positions corresponding with the sides of the brim, being free of said plate, so as to be adjusted as indicated in Fig. 2, adjusting-screws *g g* being provided to raise or lower the sides of the brim-board to suit various shapes to be obtained.

Upon the plate *e*, at the axial center thereof, is fastened a split tube *h*, of uniform bore, which forms a shaft adapted to enter the hat-block, suitably bored out or recessed to receive the same, the said shank serving to hold the hat-block rigidly in position on the brim-board. Within said split tube I arrange an expanding-piece *i*, Fig. 3, having a conical or flaring extremity *j* at the top extending through the brim-board and plate *e* and below said plate or at the split end of the tube and having its lower end projecting down through an opening in the plate *e* and being threaded to receive a nut *k* below said plate *e*. The flaring portion *j* of the expanding-piece partially projects from the upper or split end of the tube and at its top is of a cross-section greater than the bore of the tube, but less than that of the socket. The expanding-piece is so arranged in relation to the plate *e* and nut *k* as, when the nut *k* is turned, to draw the flaring or conical portion into the tube and cause the latter to spread, and thus enter into binding contact with the hat-block to hold the same in place, as will be understood in reference to Figs. 1 and 3. Supporting the plate *e* above the end of the shaft and at a distance therefrom by means of the arms *d'* allows the lower end of said expanding-piece to project downward through a central opening in said plate *e*, so that the nut *k* on said expanding-piece may lie below the plate and be manipulated thereat.

At the lower end of the shaft *c*, beneath the table, the same receives a pulley *l* of peculiar shape. The said pulley comprises a disk upon the lower side of which are fastened,

concentrically, beveled frictional surfaces or gearing of various diameters adapted to receive different coöperating pulleys *m n*, said pulleys *m n* being arranged upon a power-shaft *o*. The pulleys *m n* are provided with
 5 suitable shifting-levers *p q*, adapted to throw said pulleys into frictional or other operative relation with the coöperating surfaces or gearing on the pulley *l*. Thus by operating the
 10 shifting-lever *p* I may throw the pulley *n* into operative relation with the pulley *l* to secure a rapid rotation of the said pulley *l* and the parts operated thereby, and by operating the lever *q* the pulley *m* may be brought into en-
 15 gagement with the diametrically larger surfaces or gearing of the pulley *l* to secure a slow motion of the said pulley, as will be evident.

In connection with the brim-board and
 20 means for holding the block I employ a plurality of finishing-tools carried by suitable levers *s*, fulcrumed upon the wall or fixture *r*. Said finishing-tools preferably comprise smoothing or sad irons of any suitable construction (not shown) and a pouncing-tool *t*
 25 of peculiar construction. Said pouncing-tool is shown more clearly in Figs. 4, 5 and 9 and in Fig. 1, where *s* indicates the bent lever, having a suitable hand-piece *s'* and fulcrumal bearings *s''*. A spring-arm *u*, attached to said
 30 lever and extending parallel or substantially parallel with the handled end of the lever, serves to give elasticity to the pressure upon the felt. The free end of the said arm is provided with a pouncing device consisting of
 35 a block *v*, over which sandpaper may be stretched, and a plate *v'*, having loops *v''* for holding the said block in position, and the spring *v'''*, interposed between said plate and
 40 said block, tending to hold the loop in clamping relation to the sandpaper.

Preliminary to operation the desired hat-block is simply seated upon the brim-board and shank, and the finger-piece *k* is turned so
 45 as to clamp the said block, after which power

is applied to the machine and the brim-board is given the desired rotary motion.

When the ironing-tool is employed, the motion of the block is slow; but when the sandpapering or pouncing operation is effected
 50 the rotation is increased in rapidity, and these differential motions are obtained by means of the pulley *l*, having various concentric bearings for coöperating pulleys in the manner described or in any other manner suitable to
 55 the results to be obtained.

Having thus described the invention, what I claim as new is—

1. In a hat-finishing machine, the combination of a rotary shaft having at its upper end
 60 arms supporting a centrally-perforated plate, a brim-board fastened upon said plate to receive a hat-block, and holding means for said hat-block secured to said plate and extending
 65 downward through said plate into the space between said arms, substantially as set forth.

2. In a hat-finishing machine, the combination of a plate *e*, and brim-board *f*, a hat-block seated upon said brim-board and having bored at the center of its under surface a vertical
 70 socket, a split tube of uniform bore fastened to the upper surface of said plate *e*, and adapted to enter said vertical socket, and an expanding-piece *i*, lying in the split tube and having its lower end extending downward
 75 through the plate *e*, and threaded to receive a nut *k*, and having its upper portion flaring or conical and partially projecting from the top of the split tube, the projecting end being larger than the bore of the said tube but
 80 smaller than the bore of the socket, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 19th day of October, 1896.

WILLIAM E. CUMMINGS.

Witnesses:

CHARLES H. PELL,
 JAS. H. FLEMING.